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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,434	07/16/2003	Alex A. Behfar	BIN 4	6923
7590	04/28/2005		EXAMINER	
George M. Cooper Jones, Tullar & Cooper, P.C. Eads Station P.O. Box 2266 Arlington, VA 22202			LEE, JOHN D	
			ART UNIT	PAPER NUMBER
			2874	
			DATE MAILED: 04/28/2005	

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/619,434	BEHFAR, ALEX A.	
	<b>Examiner</b>	<b>Art Unit</b>	
	John D. Lee	2874	

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*  
**Period for Reply**

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is **FINAL**.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-9 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 24 November 2003 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____.
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>1103</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____.

The five (5) sheets of formal drawing filed on November 24, 2003, are acceptable.

The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claims 2-8 (as originally numbered) are objected to because of the following informalities: these claims are improperly numbered (i.e. they appear as 2, 2, 3, 4, 5, 6, 7, 8). For examination purposes below, the pending claims will be addressed as 1, 2, 3, 4, 5, 6, 7, 8, 9. Also, line 4 of claim 2 is redundant and should be deleted. Appropriate renumbering and correction is required.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 2 are rejected under 35 U.S.C. § 102(b) as being clearly anticipated by Japanese Patent 8-186540 to Furukawa. Furukawa discloses an optical wavelength converter comprising a ring laser having at least an input facet (port) and an output facet (port). The input facet (port) is the upper left corner of ring laser 4, and the

output facet (port) is the upper right corner of ring laser 4. When activated, the ring laser 4 produces an output beam having a wavelength  $f_3$  as a result of a four wave mixing process between wavelengths  $f_1$  and  $f_2$  (see Figure 1). If an additional wavelength is introduced at the input facet (port), the wavelength  $f_3$  is no longer produced and is thus "switched off". Any modulation in input wavelength  $f_2$  will result in a corresponding modulation of output wavelength  $f_3$ . This Furukawa arrangement thus meets all the limitations of applicant's claims 1 and 2.

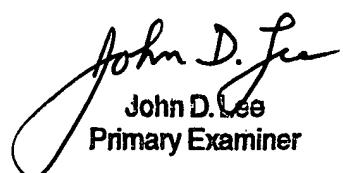
Claims 3-9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Japanese Patent 8-186540 to Furukawa. As noted in the rejection above, the generated output wavelength  $f_3$  is different from the wavelengths  $f_1$  and  $f_2$  (because of the nonlinear process used in the reference). Other nonlinear processes could be used, however. In one known nonlinear process, the output wavelength is the same as one of the input wavelengths, and this input wavelength is intensity modulated by another input wavelength. To use such a process in the ring laser of Furukawa would have been obvious to the person of ordinary skill in the art. Such modulation process can be designed to have the output wavelength appear either in the presence of, or in the absence of, the input modulating wavelength. A person of ordinary skill would have found it obvious to employ any typical basis of modulation in the Furukawa optical converter, such as an optical data pulse stream or a variable optical signal. This is because the Furukawa device is designed for use in optical communication systems. Note that applicant's claim 9 does not distinguish over Furukawa since the directionality

recited therein is not specific (i.e. the "second direction" can be interpreted to be the same as the "first direction").

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent 4,807,953 to Smith et al, U.S. Patent 4,829,528 to Band et al, U.S. Patent 5,027,361 to Kozlovsky et al, and U.S. Patent Application Publication 2002/0063944 A1 to Kim et al show optical wavelength conversion devices employing ring lasers.

All of the prior art documents listed by applicant in the Information Disclosure Statement filed on November 24, 2003, have been considered and made of record. Note the attached initialed copy of form PTO-1449. These documents are deemed to provide background information only with respect to the presently claimed invention.

Any inquiry concerning the merits of this communication should be directed to Examiner John D. Lee at telephone number (571) 272-2351. The Examiner's normal work schedule is Tuesday through Friday, 6:30 AM to 5:00 PM. Any inquiry of a general or clerical nature (i.e. a request for a missing form or paper, etc.) should be directed to the Technology Center 2800 receptionist at telephone number (571) 272-1562, to the technical support staff supervisor (Team 8) at telephone number (571) 272-1564, or to the Technology Center 2800 Customer Service Office at telephone number (571) 272-1626.



John D. Lee  
Primary Examiner